

**EUROPEAN PATENT APPLICATION**

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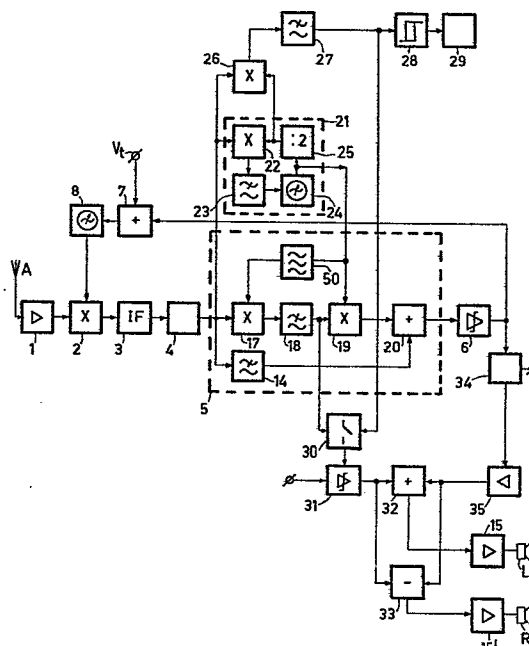
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Designated Contracting States: **AT BE CH DE FR GB IT LI NL SE**

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**FM receiver including a frequency-locked loop.**

FM receiver including a frequency-locked loop (2-14), which loop includes, successively connected, a voltage-controlled oscillator (8), a mixer circuit (2) connected to an aerial input, an IF portion comprising an IF filter (9), an FM detector (4), a loop filter arrangement (5) and a loop amplifier (6) for adjusting the transfer characteristic of the frequency-locked loop (2-14). The loop amplifier (6) is connected to a control input of the voltage-controlled oscillator (8) for a feedback of the modulation signal of the received FM signal. In order that the FM receiver may be constructed in integrated-circuit form and may be suitable for processing FM stereo signals, the loop filter arrangement (5) comprises two filter circuits (14; 17, 18, 19) arranged in parallel. The first filter circuit (14) is a low-pass filter for filtering the stereo sum signal and the second filtering circuit (17, 18, 19) is a band-pass filter for filtering the stereo difference signal. In this way it is ensured that for the processing of FM stereo signals the receiver is at least comparable to conventional FM stereo receivers as regards selectivity, harmonic distortion and stability.





European Patent  
Office

# EUROPEAN SEARCH REPORT

0088467

Application number

EP 83 20 0281

## DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. <sup>3</sup> )
A	GB-A-2 059 702 (PHILIPS) * Page 1, line 46 - page 6, line 98; figures 1,1A *	1	H 03 C 3/06 H 04 B 1/16
A	IEEE TRANSACTIONS ON COMMUNICATION TECHNOLOGY, vol. COM-19, no. 5, October 1971, pages 669-675, New York, USA F. CARDEN et al.: "A multifilter phase-lock loop" * Page 669, left-hand column, line 1 - right-hand column, line 3; figures 1,2,5 *	1	
A	US-A-3 824 346 (MASASHI et al.) * Column 2, line 48 - column 3, line 21; figure 1 *	3	
A	GB-A-1 118 903 (GUSYATINSKY) * Page 2, line 56 - page 3, line 89; figures 1-3 *	3	TECHNICAL FIELDS SEARCHED (Int. Cl. <sup>3</sup> )  H 03 C H 04 B H 03 D H 03 J
The present search report has been drawn up for all claims			

Place of search  
THE HAGUE

Date of completion of the search  
08-06-1983

Examiner  
DHONDT I.E.E.

### CATEGORY OF CITED DOCUMENTS

- A particularly relevant if taken alone
- particularly relevant if combined with another document of the same category
- technological background
- non-written disclosure
- intermediate document

- T : theory or principle underlying the invention
- E : earlier patent document, but published on, or after the filing date
- D : document cited in the application
- L : document cited for other reasons
- & : member of the same patent family, corresponding document

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